

CLAIMS

1 ^{sub} 1. A server in a system providing information
2 ^{AI} to a user terminal being able to display a map
3 comprising:
4 a database for holding a specific information
5 document having index information composed of a
6 plurality of elements out of information documents
7 having attribute information representing attributes
8 of service information to be provided as bubble data
9 in which spatial range information in the three-
10 dimensional space is associated with retrieval
11 information for obtaining said service information;
12 a retrieving unit for retrieving specific
13 bubble data including coordinate information and
14 display object attribute information in said bubble
15 data on the basis of a mapping request, transmitted
16 from said user terminal, having said coordinate
17 information on an object displayed on said map and said
18 display object attribute information representing
19 attributes of service information to be provided by
20 said object; and
21 a notifying unit for notifying said user
22 terminal of a mapping response having said spatial
23 range information, said attribute information and
24 said retrieval information included in said specific
25 bubble data.

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1 2. The server according to claim 1, wherein
2 said notifying unit notifies of said mapping response
3 having spatial range information including a similar
4 bubble diameter having a diameter according to a scale
5 of a map displayed on said user terminal and address
6 information.

1 3. The server according to claim 1, wherein
2 said database correlates said bubble data with a
3 unique number by which contents of service information
4 of said bubble data can be identified, and holds said
5 bubble data and said unique number.

1 4. A server in a system providing information
2 to a user terminal being able to display a map
3 comprising:

4 a database for holding a specific information
5 page having index information composed of a plurality
6 of elements relating to attribute information out of
7 information pages having attribute information
8 representing attributes of various information
9 relating to an object or service information relating
10 to said various information as bubble data in which
11 spatial range information composed of latitude,
12 longitude, altitude and a bubble diameter of said
13 object in the three-dimensional space is associated

09892721-062701

14 with address information for obtaining said service
15 information;

16 a retrieving unit for retrieving specific
17 bubble data including coordinate information and
18 display object attribute information in said bubble
19 data on the basis of a mapping request, transmitted
20 from said user terminal, having said coordinate
21 information in the three-dimensional space composed
22 of latitude, longitude and altitude of an object
23 displayed on said map and said display object
24 attribute information representing attributes of
25 various information relating to said object displayed
26 on said map or service information relating to said
27 various information; and

28 a notifying unit for notifying said user
29 terminal of a mapping response having said spatial
30 range information, said attribute information and
31 said address information of said specific bubble data.

1 5. The server according to claim 4, wherein
2 said notifying unit notifies of said mapping response
3 having spatial range information including a similar
4 bubble diameter having a diameter according to a scale
5 of a map displayed on said user terminal and address
6 information.

1 6. The server according to claim 4, wherein

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2 said retrieving unit retrieves said specific bubble
3 data in another database connected to a network on the
4 basis of said mapping request.

1 7. The server according to claim 4 further
2 comprising:

3 a Web information outputting unit for holding
4 user information; and

5 an address generating unit for generating an
6 address at which said user information held in said
7 Web information outputting unit is held.

1 8. The server according to claim 4, wherein
2 said database holds an animation element to be
3 displayed on said user terminal in document type
4 definition information.

1 9. The server according to claim 4, wherein
2 said database holds an application program element for
3 displaying said map in document type definition
4 information.

1 10. The server according to claim 4, wherein
2 said database holds a communication partner
3 information element relating to a specific
4 communication partner in document type definition
5 information.

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1 11. The server according to claim 4, wherein
2 said database classifies document type definition
3 information according to a plurality of elements, and
4 holds said document type definition information.

1 12. The server according to claim 4, wherein
2 said database correlates said bubble data with a
3 unique number by which contents of service information
4 of said bubble data can be identified, and holds said
5 bubble data and said unique number.

1 13. The server according to claim 12, wherein
2 said database holds monitoring bubble data for
3 detecting a moving object and a bubble diameter of said
4 monitoring bubble data based on position information
5 on said moving object, and records a moving object
6 element by which said moving object can be specified
7 in a file held in said database.

1 14. The server according to claim 4, wherein
2 said database records data relating to a similar
3 bubble diameter having a diameter according to a scale
4 of a map displayed on said user terminal in a file.

1 15. The server according to claim 4, wherein
2 said database holds at least either one of history

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3 information of address information caused by an access
4 of said user terminal and identifier information by
5 which said user terminal can be identified in a file.

1 16.The server according to claim 4, wherein
2 said database holds data relating to a counter whose
3 count value can be changed in a file.

1 17.The server according to claim 4, wherein
2 said database holds data relating to an accessible
3 time in a file.

1 18.The server according to claim 4, wherein
2 said database holds data relating to an application
3 program for displaying a map on said user terminal in
4 a file.

1 19.The server according to claim 4, wherein
2 said database handles address information based on
3 said spatial range information as an electronic mail
4 address, and holds said spatial range information
5 correspondingly to said electronic mail address.

1 20.A server in a system providing information
2 to a user terminal being able to display a map
3 comprising:

4 a database for holding a specific home page

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5 having document type definition information composed
6 of a plurality of tags relating to attribute
7 information out of home pages having said attribute
8 information representing attributes of facility
9 information relating to a building or service
10 information of said facility information as bubble
11 data in which spatial range information composed of
12 latitude, longitude, and altitude and a bubble
13 diameter of said building in the three-dimensional
14 space is associated with a uniform resource locator
15 for obtaining said service information;

16 a retrieving unit for retrieving specific
17 bubble data including coordinate information and
18 display object attribute information in said bubble
19 data on the basis of a mapping request having said
20 coordinate information in the three-dimensional
21 space composed of latitude, longitude and altitude of
22 a building displayed on said map and said display
23 object attribute information representing attributes
24 of facility information relating to a building
25 displayed on said map or service information of said
26 facility information; and

27 a notifying unit for notifying said user
28 terminal of a mapping response having said spatial
29 range information, said attribute information and
30 said uniform resource locator of said specific bubble
31 data.

09092721-062701

1 21. The server according to claim 20, wherein
2 said notifying unit notifies of said mapping response
3 having spatial range information including a similar
4 bubble diameter having a diameter according to a scale
5 of a map displayed on said user terminal and address
6 information based on said coordinate information
7 included in said mapping request.

1 22. The server according to claim 20, wherein
2 said database correlates said bubble data with a
3 unique number by which contents of service information
4 of said bubble data can be identified, and holds said
5 bubble data and said unique number.

1 23. A user terminal in a system providing
2 information to said user terminal being able to
3 display a map comprising:

4 a map information outputting unit for
5 outputting map information;

6 a display unit for displaying an image of an
7 object on the basis of said map information outputted
8 from said map information outputting unit;

9 a transmitting unit for transmitting a
10 mapping request having coordinate information in the
11 three-dimensional space on said object displayed on
12 said display unit and display object attribute

09092721-062701

13 information representing attributes of service
14 information to be provided by said object to a server
15 connected to said user terminal over a network;

16 a receiving unit for receiving a mapping
17 response having spatial range information in the
18 three-dimensional space corresponding to said
19 coordinate information, attribute information
20 representing attribute information of service
21 information to be provided by said object, and
22 retrieval information for obtaining said service
23 information notified from said server in response to
24 said mapping request;

25 a mapping unit for displaying an image
26 geometry along with said map at a position indicated
27 by said spatial range information included in said
28 mapping response on said display unit; and

29 a mapping data holding unit for correlating
30 said image geometry displayed by said mapping unit
31 with said retrieval information included in said
32 mapping response, and holding said image geometry and
33 said retrieval information.

1 24.A user terminal in a system providing
2 information to said user terminal being able to
3 display a map comprising:

4 a map information outputting unit for
5 outputting map information on an object in the

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6 three-dimensional space;
7 a display unit for displaying an image of said
8 object on a screen on the basis of said map information
9 outputted from said map information outputting unit;
10 a transmitting unit for transmitting a
11 mapping request having coordinate information in the
12 three-dimensional space composed of latitude,
13 longitude and altitude of said object displayed on
14 said display unit and display object attribute
15 information representing attributes of various
16 information relating to said object or service
17 information relating to said various information to
18 a server connected to said user terminal over a
19 network;
20 a receiving unit for receiving a mapping
21 response having spatial range information composed of
22 latitude, longitude, altitude and a bubble diameter
23 of said object in the three-dimensional space
24 corresponding to said coordinate information and
25 address information for obtaining said service
26 information notified from said server in response to
27 said mapping request;
28 a mapping unit for displaying an image
29 geometry along with an image of said object at a
30 position indicated by said spatial range information
31 included in said mapping response on said display
32 unit; and

33 a mapping data holding unit for correlating
34 said image geometry displayed by said mapping unit
35 with said address information included in said mapping
36 response, and holding said image geometry and said
37 address information.

1 25.A user terminal in a system providing
2 information to said user terminal being able to
3 display a map comprising:

4 a map information outputting unit for
5 outputting map information on a building in the
6 three-dimensional space;

7 a display unit for displaying an image of said
8 building on a screen on the basis of said map
9 information outputted from said map information
10 outputting unit;

11 a transmitting unit for transmitting a
12 mapping request having coordinate information
13 composed of latitude, longitude, altitude and a bubble
14 diameter in the three-dimensional space of said
15 building displayed on said display unit and display
16 object attribute information representing attributes
17 of facility information relating to said building or
18 service information of said facility information to
19 a server connected to said user terminal over a
20 network;

21 a receiving unit for receiving a mapping

09892721.062701

22 response having spatial range information composed of
23 latitude, longitude, altitude and a bubble diameter
24 of said building in the three-dimensional space
25 corresponding to said coordinate information and a
26 uniform resource locator for obtaining said service
27 information notified from said server in response to
28 said mapping request;

29 a mapping unit for displaying an image
30 geometry along with an image of said building at a
31 position indicated by said spatial range information
32 included in said mapping response on said display
33 unit; and

34 a mapping data holding unit for correlating
35 said image geometry displayed by said mapping unit
36 with said uniform resource locator included in said
37 mapping response, and holding said image geometry and
38 said uniform resource locator.

1 26.The user terminal according to claim 25,
2 wherein said receiving unit receives said mapping
3 response having spatial range information including
4 a similar bubble diameter having a diameter according
5 to a scale of said map displayed on said display unit
6 and address information based on said coordinate
7 information included in said mapping request.

1 27.The user terminal according to claim 25

09892721.062701

2 further comprising a detecting unit for detecting
3 position information including a latitude of an object,
4 a longitude thereof, an altitude thereof, a direction
5 thereof, and an inclination angle thereof in the three
6 dimensional space.

1 28. The user terminal according to claim 27,
2 wherein said detecting unit comprises at least any one
3 of a direction sensor being able to measure the
4 direction, a satellite information receiving unit
5 being able to receive satellite information through
6 the use of a global positioning system, and an
7 inclination sensor being able to measure an
8 inclination angle of said user terminal with respect
9 to the horizontal line.

1 29. The user terminal according to claim 25,
2 wherein said transmitting unit transmits said mapping
3 request using an electronic mail address generated on
4 the basis of said coordinate information.

1 30. An information providing service system
2 providing information to a user terminal being able
3 to display a map comprising:

4 a server for holding a specific information
5 page having document type definition information out
6 of information pages having attribute information

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7 representing attributes of various information
8 relating to an object or service information relating
9 to said various information and said document type
10 definition information composed of a plurality of
11 elements as bubble data in which spatial range
12 information composed of a latitude of said object, a
13 longitude thereof, an altitude thereof and a bubble
14 diameter thereof in the three-dimensional space is
15 associated with address information for obtaining
16 said service information;

17 said user terminal connected to said server
18 over a network to display said various information
19 retrieved using said bubble data;

20 said server comprising:

21 a database for holding said bubble
22 data;

23 a retrieving unit for retrieving
24 specific bubble data including coordinate
25 information and display object attribute information
26 in said bubble data on the basis of a mapping request
27 having said coordinate information in the three-
28 dimensional space composed of a latitude of said
29 object, a longitude thereof and an altitude thereof
30 displayed on said map and said display object
31 attribute information representing attributes of
32 various information relating to said object or service
33 information relating to said various information

09892721.062701

34 transmitted from said user terminal;

35 a notifying unit for notifying said
36 user terminal of a mapping response having said space
37 region information, said attribute information, and
38 said address information of said specific bubble data;

39 said user terminal comprising:

40 a map information outputting unit for
41 outputting map information on an object in the
42 three-dimensional space;

43 a display unit for displaying an image
44 of an object on a screen on the basis of said map
45 information outputted from said map information
46 outputting unit;

47 a transmitting unit for transmitting a
48 mapping request having space region information
49 composed of a latitude of said object, a longitude
50 thereof, an altitude thereof and a bubble diameter
51 thereof in the three-dimensional space of an image of
52 said object displayed on said display unit and
53 attribute information representing attributes of
54 various information relating to said object or service
55 information relating to said various information to
56 said server connected to said user terminal over a
57 network;

58 a receiving unit for receiving a
59 mapping response having spatial range information
60 composed of a latitude of said object, a longitude

09892721 062701
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61 thereof, an altitude thereof, and a bubble diameter
62 thereof in the three-dimensional space corresponding
63 to said space region information and address
64 information for obtaining said service information
65 notified from said server in response to said mapping
66 request;

67 a mapping unit for displaying an image
68 geometry along with an image of said object at a
69 position indicated by said space region information
70 included in said mapping response; and

71 a mapping data holding unit for
72 correlating said image geometry displayed by said
73 mapping unit with said address information included
74 in said mapping response, and holding said image
75 geometry and said address information.

1 31. An information providing service
2 system providing information to a user terminal being
3 able to display a map comprising:

4 a database for holding a specific information
5 page having document type definition information out
6 of information pages having attribute information
7 representing attributes of various information
8 relating to an object or service information relating
9 to said various information and said document type
10 definition information composed of a plurality of
11 elements as bubble data in which spatial range

09892721-062701

12 information composed of a latitude of said object, a
13 longitude thereof, an altitude thereof and a bubble
14 diameter thereof in the three-dimensional space is
15 associated with address information for obtaining
16 said service information;

39 a display unit for displaying an image
40 of said object on a screen on the basis of said map
41 information outputted from said map information
42 outputting unit;

43 a transmitting unit for transmitting a
44 mapping request having coordinate information
45 composed of a latitude of said object, a longitude
46 thereof, an altitude thereof and a bubble diameter
47 thereof in the three-dimensional space displayed on
48 said display unit and attribute information
49 representing attributes of various information
50 relating to said object or service information
51 relating to said various information to said server
52 connected to said user terminal over a network;

53 a receiving unit for receiving a
54 mapping response having spatial range information
55 composed of a latitude of said object, a longitude
56 thereof, an altitude thereof and a bubble diameter
57 thereof in the three-dimensional space corresponding
58 to said spatial range information and address
59 information for obtaining said service information
60 notified from said server in response to said mapping
61 request;

62 a mapping unit for displaying an image
63 geometry along with an image of said object at a
64 position indicated by said spatial range information
65 included in said mapping response on said display

09892721.062701

66 unit; and

67 a mapping data holding unit for
68 correlating said image geometry displayed by said
69 mapping unit with said address information included
70 in said mapping response, and holding said image
71 geometry and said address information.

1 32. An information providing service
2 method in a system providing information to a user
3 terminal being able to display a map comprising the
4 steps of:

5 a selecting step of selecting an object
6 displayed on a map by said user terminal;

7 a user terminal transmitting step of
8 transmitting coordinate information relating to said
9 object selected at said selecting step and display
10 object attribute information representing attributes
11 of service information to be provided by said object
12 from said user terminal to a server connected to said
13 user terminal over a network;

14 a server transmitting step of transmitting
15 spatial range information, attribute information and
16 address information to said user terminal from said
17 server on the basis of said coordinate information and
18 said display object attribute information
19 transmitted at said user terminal transmitting step;
20 and

09892721-062701

21 a mapping step of displaying an image geometry
22 along with said object at a position indicated by said
23 spatial range information transmitted at said server
24 transmitting step on a display unit of said user
25 terminal.

1 33. An information providing service
2 method in a system providing information to a user
3 terminal being able to display a map comprising the
4 steps of:

5 a map displaying step of displaying a map on
6 a display unit displaying an image in said user
7 terminal;

8 a selecting step of selecting an object from
9 map information displayed at said map displaying step
10 in said user terminal;

11 a transmitting step of transmitting a mapping
12 request having coordinate information in the
13 three-dimensional space relating to said object
14 selected at said selecting step and display object
15 attribute information representing attributes of
16 service information to be provided from said user
17 terminal to a server connected to said user terminal
18 over a network;

19 a retrieving step of retrieving by said server
20 specific bubble data including coordinate
21 information and display object attribute information

09892721.062701
T02290" T226860

22 in bubble data in which spatial range information
23 composed of a latitude of said object, a longitude
24 thereof, an altitude thereof and a bubble diameter
25 thereof in the three-dimensional space is associated
26 with address information for obtaining service
27 information provided by said object on the basis of
28 said mapping request at said transmitting step;

29 a notifying step of notifying said user
30 terminal from said server of a mapping response having
31 said spatial range information and said address
32 information of said specific bubble data retrieved at
33 said retrieving step;

34 a mapping step of displaying an image geometry
35 along with said object at a position indicated by said
36 spatial range information included in said mapping
37 response notified at said notifying step on said
38 display unit in said user terminal; and

39 a providing step of providing said image
40 geometry and said map displayed at said mapping step
41 to said user terminal.

1 34. The information providing service method
2 according to claim 33, wherein at said map displaying
3 step, said user terminal displays said map on said
4 screen on the basis of at least either one of the
5 latitude or the longitude obtained.

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4 a changing step of outputting a similar bubble
5 diameter having a diameter according to a scale of said
6 map displayed on said display unit of said user
7 terminal from said server on the basis of said
8 coordinate information included in said mapping
9 request transmitted at said transmitting step; and

1 36. The information providing service method
2 according to claim 35, wherein at said changing step,
3 said server changes said similar bubble diameter on
4 the basis of at least any one of the number of accesses,
5 an accessible time and an accessible season.

1 38.The information providing service method
2 according to claim 33, wherein at said retrieving step,

3 said server retrieves using a counter whose count
4 value can be changed by an access.

1 39.The information providing service method
2 according to claim 38, wherein at said retrieving step,
3 said server nullifies a predetermined file when said
4 count is stopped.

1 40.The information providing service method
2 according to claim 33, wherein at said retrieving step,
3 retrieval is performed on the basis of the number of
4 accesses that said server can receive concurrently.

1 41.The information providing service method
2 according to claim 33, wherein at said retrieving step,
3 retrieval is performed on the basis of communication
4 partner information relating to a specific
5 communication partner.

1 42.The information service providing method
2 according to claim 33, wherein said retrieving step
3 comprises the steps of:

4 a reading step of reading communication
5 partner bubble data agreeing with information set
6 beforehand relating to said communication partner in
7 said server;

8 a present position information receiving step

09892721.062701

9 of receiving present position information on said user
10 terminal by said server; and

11 an approach detecting step of detecting
12 approach of said user terminal and said communication
13 partner to each other by said server on the basis of
14 said communication partner bubble data and said
15 present position information.

1 43. An information service providing method in
2 a system providing information to a user terminal
3 being able to display a map comprising the steps of:

4 a map displaying step of displaying a map on
5 a display unit displaying an image in said user
6 terminal;

7 a selecting step of selecting an object from
8 map information displayed at said map displaying step
9 in said user terminal;

10 a transmitting step of transmitting a mapping
11 request having coordinate information composed of a
12 latitude of said object, a longitude thereof, an
13 altitude thereof and a bubble diameter thereof in the
14 three-dimensional space selected at said selecting
15 step and display object attribute information
16 representing attributes of various information
17 relating to said object or service information
18 relating to said various information from said user
19 terminal to a server connected to said user terminal

09892721-062701

20 over a network;

21 a retrieving step of retrieving by said server
22 specific bubble data including said coordinate
23 information and said display object attribute
24 information in bubble data in which spatial range
25 information composed of a latitude of said object, a
26 longitude thereof, an altitude thereof and a bubble
27 diameter thereof in the three-dimensional space is
28 associated with address information for obtaining
29 various information relating to said object or service
30 information relating to said various information on
31 the basis of said mapping request at said transmitting
32 step;

33 a notifying step of notifying said user
34 terminal from said server of a mapping response having
35 said spatial range information and said address
36 information of said specific bubble data retrieved at
37 said retrieving step; and

38 a mapping step of displaying an image geometry
39 along with said object at a position indicated by said
40 spatial range information included in said mapping
41 response on said display unit of said user terminal
42 on the basis of said specific bubble data notified at
43 said notifying step.

1 44. An information providing service method in
2 a system providing information to a user terminal

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3 being able to display a map comprising the steps of:
4 an information page recording step of
5 recording a specific information page composed of a
6 plurality of elements relating to attribute
7 information out of information pages having said
8 attribute information representing attributes of
9 various information relating to an object or service
10 information relating to said various information in
11 a database by said user terminal;

12 a bubble data registering step of registering
13 by said server bubble data in which spatial range
14 information composed of a latitude of said object, a
15 longitude thereof, an altitude thereof and a bubble
16 diameter thereof in the three-dimensional space is
17 associated with address information for obtaining
18 said service information on the basis of said
19 information page recorded at said information page
20 recording step; and

21 a providing step of providing information
22 generated from said bubble data registered at said
23 bubble data registering step from said server to said
24 user terminal.

1 45. The information providing service method
2 according to claim 44, wherein said bubble data
3 registering step comprises the steps of:

4 a specific document type definition

09892721.062701

5 information extracting step of extracting by said
6 server plural pieces of specific document type
7 definition information having a predetermined
8 element out of said document type definition
9 information of said information pages recorded at said
10 information page recording step; and

11 a first registering step of registering by
12 said server said plural pieces of specific document
13 type definition information as said bubble data.

1 46. The information providing service method
2 according to claim 44, wherein said bubble data
3 registering step comprises the steps of:

4 a recording step of recording by said server
5 said information page recorded at said information
6 page recording step in another database; and

7 a second registering step of registering by
8 said server said information page recorded at said
9 recording step as bubble data in which spatial range
10 information composed of a latitude of said object, a
11 longitude thereof, an altitude thereof and a bubble
12 diameter thereof in the three-dimensional space is
13 associated with address information for obtaining
14 said service information on said database.

09892721-062701
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